

Amendments to the Claims

This listing of claims replaces all prior versions, and listings of claims in the application.

1. (Currently amended) An isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide, the amino acid sequence of which is at least 95% identical to ~~a reference amino acid sequence selected from the group consisting of:~~

- ~~(a) amino acids 1 to 118 of Figure 3;~~
- ~~(b) amino acids 1 to 119 of Figure 3;~~
- ~~(c) amino acids 1 to 120 of Figure 3;~~
- ~~(d) amino acids 1 to 121 of Figure 3;~~
- ~~(e) amino acids 119 to 618 of Figure 3;~~
- ~~(f) amino acids 120 to 618 of Figure 3;~~
- ~~(g) amino acids 121 to 618 of Figure 3;~~
- ~~(h) amino acids 122 to 618 of Figure 3;~~
- ~~(i) amino acids 34 to 147 of Figure 3;~~
- ~~(j) amino acids 35 to 154 of Figure 3;~~
- ~~(k) amino acids 34 to 154 of Figure 3;~~
- ~~(l) amino acids 1 to 154 of Figure 3;~~
- ~~(m) amino acids 155-618 of Figure 3 and~~
- ~~(n) amino acids 1-618 of Figure 3, (SEQ ID No. 2),~~

wherein said amino acid sequence encodes a polypeptide that has C5-epimerase enzymatic activity.

2. (original) The polynucleotide of claim 1 which is DNA.
3. (original) The polynucleotide of claim 1 which is RNA.
4. (original) The polynucleotide of claim 1, further comprising a heterologous polynucleotide.
5. (original) The polynucleotide of claim 4, wherein said heterologous polynucleotide encodes a heterologous polypeptide.
6. (original) The polynucleotide of claim 5, wherein said heterologous polynucleotide is positioned at the 3' of said nucleotide sequence.
7. (original) A vector comprising the polynucleotide of any one of claims 1-6.
8. (original) The vector of claim 7, wherein said polynucleotide is operably linked to a heterologous regulatory polynucleotide.
9. (original) A host cell comprising the polynucleotide of any one of claims 1-6.
10. (original) The host cell of claim 9, wherein said isolated polynucleotide is operably linked to a heterologous regulatory polynucleotide.

11. (original) A method of producing a protein that comprises culturing the host cell of claim 10 under conditions such that said protein is expressed, and recovering said protein.

12. -14. (canceled)

15. (original) A method of increasing the activity of a C5-epimerase, said method comprising:

(a) providing a first polynucleotide comprising a nucleotide sequence encoding a polypeptide, the amino acid sequence of which is at least 80% identical to a reference amino acid sequence selected from the group consisting of amino acids 35 to 154 of Figure 3 and amino acids 34 to 154 of Figure 3;

(b) attaching said first polynucleotide of (a) in frame to the N-terminus of [[to]] a second polynucleotide encoding a C5-epimerase; and

(c) expressing the fusion polynucleotide,

wherein the C5-epimerase that is encoded by said fusion polynucleotide has an increased C5-epimerase activity when compared to the C5-epimerase activity of said polypeptide that is encoded by said second polynucleotide.

16. (original) The method of claim 15, wherein said first polynucleotide comprises a nucleotide sequence encoding a polypeptide, the amino acid sequence of which is amino acids 35 to 154 of Figure 3.

17. (original) The method of claim 15, wherein said first polynucleotide comprises a nucleotide sequence encoding a polypeptide, the amino acid sequence of which is amino acids 34 to 154 of Figure 3.

18. (original) The method of any one of claims 15-17, wherein said second polynucleotide encoding a C5-epimerase encodes bovine C5-epimerase.